

Claims

1. A light string comprising:

a predetermined number of light emitting diodes electrically coupled in series to form at least one series block, each diode having an average alternating current drive voltage, the series block having a first diode and a last diode, the first diode directly coupled intermediate a source end and a terminal end of a first of a pair of wires and the last diode directly coupled intermediate the source end and terminal end of a second of the pair of wires, the light string being free from additional circuitry intermediate the first diode and the source end of the first pair of wires, between each of the diodes, and intermediate the last diode and the source end of the second pair of wires, and

a first connector coupled to both the source end of the first of the pair of wires and the source end of the second of the pair of wires which connector facilitates a direct connection between the first diode and a first side of an alternating current electrical power supply, and the last diode and a second side of the alternating current electrical power supply, the supply having a supply voltage, the predetermined number of diodes substantially calculated by dividing the supply voltage by the average alternating current drive voltage.

2. The light string of claim 1 in which the light string is adapted to accept

alternating current electricity without an intervening conversion to direct current electricity.

Series
parallel

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3. The light string of claim 2 further comprising a second pair of wires supporting the LEDs.

4. The light string of claim 1 in which the electrical power supply provides
5 alternating current having an alternating current voltage of at least about 110 volts.

5. The light string of claim 4 in which each LED has a p-n junction defining a break down voltage above which voltage applied in reverse bias said p-n junction breaks down, and in which light string the alternating current voltage is less than the
10 break down voltage.

6. The light string of claim 5 in which the alternating current voltage is in the range of about 110-220 volts.

7. The light string of claim 1 in which the alternating current has a frequency effective to cause each LED to emit pulsed light which the human eye perceives as continuous.
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8. The light string of claim 7 in which the frequency is at least about 50 Hz.

9. The light string of claim 1 in which the first connector is polarized, and which light string further comprises a second polarized connector electrically connected to the terminal end of the first of the pair of wires and the terminal end of the second of
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the pair of wires, said second polarized connector being adapted to couple with a first polarized connector of another light string, thereby providing for coupling of multiple light strings in an end-to-end arrangement.

5 10. The light string of claim 1 in which the number of LEDs of each series block is at most a maximum number determined by the electrical power supply.

10 11. The light string of claim 1 in which each LED has a corresponding light output color and all of the LEDs in each series block is either of the same color or of different colors.

12. The light string of claim 11 in which the LEDs in each series block are arranged by color either in a non-random order or a pseudo-random order.

15 13. The light string of claim 11 in which at least one LED comprises a housing and a fiber-optic bundle removably mounted to the housing operative to diffuse light output of the LED through the fiber-optic bundle.

20 14. The light string of claim 1 in which the LEDs are offset from the wires and arranged relative to a wire axis.

15. The light string of claim 14 in which each LED is arranged parallel to the wires to create a straight arrangement.

